

power poles in the eastern U.S. in Polk County, Florida. A nest is successful if it fledges at least one young. We documented five successful Red-tailed Hawk nests on man-made structures (four 230-kV transmission towers and one billboard) in southeast Wisconsin in 1992. Three were successful in 1991 and two in 1990. Nests and structures were higher and closure at the nest was more open than traditional sites in the region. No overstory trees were present in a 0.04-ha circular plot centered on the nest site. Nesting Red-tailed Hawk populations in the Midwest increased over the last four decades. In 1992, sixteen redtail pairs nested in urban habitat in the metropolitan Milwaukee area of southeast Wisconsin. For this study, a nest site is considered urban if 70% or more of the land within a 1.5 km radius of the nest is being used for industrial or residential purposes. The relationship between increased Red-tailed Hawk populations and changes in land-use patterns needs to be studied and could be beneficial for the development of new raptor management techniques in urban areas. Nesting on man-made structures may compensate for, and be in response to, decreased natural nesting habitat and changes in land-use patterns such as increased urbanization and monotypic agricultural practices.

RELATIVE ABUNDANCE AND NEST SITE SELECTION OF RED-SHOULDERED HAWKS (*BUTEO LINEATUS*) NESTING WITHIN FLOODPLAIN FORESTS IN POOLS 9-11 AND 16-19 OF THE UPPER MISSISSIPPI RIVER VALLEY

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During the spring of 1992, we searched 101 areas within the Upper Mississippi River Valley for evidence of nesting Red-shouldered Hawks (RSH), which are considered endangered, threatened, or of special concern in most mid-western states. We documented or suspected RSH nesting in 27 of the 62 areas searched in Pools 9-11 (McGregor District). This district has had a comprehensive forest and wetland management plan which limited timber harvest and the construction of artificial levees since the late 1930s. In contrast, we documented or suspected RSH nesting in only five of the 42 areas searched in Pools 16-19 (Wapello District). This district has not had a comprehensive forest management plan and it has a series of elaborate levee systems restricting the river. At the active RSH nest sites we measured the distance to nearest stream, main channel of the Mississippi River, ridge, road, railroad track, human dwelling, agricultural field, levee, and logging activity. We compared RSH nest sites to random sites selected within the river valley. All RSH nesting sites were located in forest tracts where the overhead canopy was well-developed, in areas that had no logging activity for 45-55 years. All nest sites were within 200 m of a temporary pool, small stream, or the confluence of two streams. In contrast, no

RSH nesting sites were found within 800 m of the main channel of the Mississippi River, nor were any found in apparently suitable forest habitats which were bordered by levees and agricultural fields.

THE U.S. FISH AND WILDLIFE SERVICE'S STATUS REVIEW OF ARCTIC PEREGRINE FALCONS

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Arctic peregrine falcon (*Falco peregrinus tundrius*) populations have expanded since the 1970s following restrictions on the use of organochlorines. In 1984, in response to the recovery, the U.S. Fish and Wildlife Service down-listed the status of arctic peregrines from Endangered to Threatened. Later surveys and field research have shown that the recovery has continued. In 1991, the U.S. Fish and Wildlife Service initiated a review of the status of the arctic peregrine falcons throughout North America in order to determine if delisting the subspecies is appropriate. This involved accumulating all the available data on population trends, containments, and migration counts. The purpose of this paper is to provide a brief, continent-wide, overview of the information that has been collected, and to update the RRF on the Fish and Wildlife Service's current management strategy for this subspecies.

THE USE OF SONOGRAPHIC ANALYSIS IN IDENTIFYING INDIVIDUAL PEREGRINE FALCONS (*FALCO PEREGRINUS*)

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Recordings of nesting Peregrine Falcons in the northeastern United States were made in 1989, 1990, and 1991. The "cack" call was recorded because it is a defense call and is therefore easily elicited. Sonograms were generated from the recordings and analyzed for vocal distinctions among individuals. Three frequency and three temporal variables were measured from the sonograms, and two slope variables were derived. Discriminant function analysis on a sample of 406 calls from 17 individuals was able to successfully discriminate among individuals. Multivariate analysis of variance comparing the overall variation of calls among birds to the variation within birds was highly significant ( $P < 0.001$ ).

USE OF RAPTORS FOR BUILDING LOCAL CAPACITY FOR CONSERVATION IN LATIN AMERICA

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In 1987, The Peregrine Fund initiated a preliminary trip to Guatemala and Belize to select research locations for the *Maya Project*—a multi-year, community-level project focusing on raptors to achieve conservation of biological diversity and development of local capacity for conservation. Training and education are critical components in